

Application Number 09/808,313
Responsive to Office Action mailed May 10, 2005

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

Claim 1 (Currently Amended): A method comprising:

receiving intercepting a multicast message from a remote storage device to a computer, wherein the message requests a network address for the remote storage device from the computer;

detecting the attachment of the remote storage device to a network in response to receiving the intercepted the multicast message; and

automatically incorporating storage capacity of the remote storage device into a logical storage volume.

Claim 2 (Original): The method of claim 1, wherein incorporating the storage capacity comprises incorporating the storage capacity into an existing logical volume.

Claim 3 (Original): The method of claim 1, wherein incorporating the storage capacity comprises incorporating the storage capacity into a new logical volume.

Claim 4 (Original): The method of claim 1, further comprising automatically expanding a size of a storage space provided by a file system to include the storage capacity.

Claim 5 (Original): The method of claim 1, wherein incorporating the storage capacity comprises incorporating the storage capacity according to one or more pre-defined policies.

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Claim 6 (Original): The method of claim 5, wherein incorporating the storage capacity comprises:

- forming a network-based connection with the remote storage device;
- creating a physical volume for the remote storage device; and
- adding the physical volume to a volume group.

Claim 7 (Original): The method of claim 5, further comprising selecting the volume group from a number of volume groups based on one of the pre-defined policies.

Claim 8 (Currently Amended): The method of claim 1, wherein ~~detecting the attachment of the remote storage device comprises intercepting a request from the remote storage device for an~~ the network address comprises an Internet Protocol (IP) address.

Claim 9 (Cancelled).

Claim 10 (Original): The method of claim 1, wherein incorporating the storage capacity comprises automatically controlling a logical volume manager (LVM) in response to the detected remote storage device.

Claim 11 (Previously Presented): The method of claim 10, wherein automatically controlling the LVM comprises:

- instantiating a network driver to form a network-based connection with the remote storage device;
- directing the LVM to create a physical volume for the remote storage device as if the remote storage device were local to the LVM; and
- directing the LVM to add the physical volume to a volume group.

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Claim 12 (Currently Amended): A computer-readable medium having instructions contained therein for causing a programmable processor to:

intercept receive a multicast message from a remote storage device to a computer that maintains network addresses;

detect the attachment of the remote storage device to a network in response to intercepting receiving the multicast message; and

automatically incorporate storage capacity of the remote storage device into a logical storage volume.

Claim 13 (Original): The computer-readable medium of claim 12, wherein the instructions cause the processor to incorporate the storage capacity into an existing logical volume.

Claim 14 (Original): The computer-readable medium of claim 12, wherein the instructions cause the processor to incorporate the storage capacity into a new logical volume.

Claim 15 (Original): The computer-readable medium of claim 12, wherein the instructions cause the processor to automatically expand a size of a storage space provided by a file system to include the incorporated storage capacity.

Claim 16 (Original): The computer-readable medium of claim 12, wherein the instructions cause the processor to incorporate the storage capacity according to one or more pre-defined policies.

Claim 17 (Original): The computer-readable medium of claim 12, wherein the instructions cause the processor to:

form a network-based connection with the remote storage device;
create a physical volume for the remote storage device; and
add the physical volume to a volume group.

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Claim 18 (Original): The computer-readable medium of claim 17, wherein the instructions cause the processor to select the volume group from a number of volume groups based on a pre-defined policy.

Claim 19 (Currently Amended): The computer-readable medium of claim 12, wherein the ~~instructions cause the processor to intercept a request from the remote storage device for an~~ network addresses comprises Internet Protocol (IP) addresses.

Claim 20 (Cancelled).

Claim 21 (Original): The computer-readable medium of claim 12, wherein the instructions cause the processor to automatically control a logical volume manager (LVM) in response to the detected remote storage device.

Claim 22 (Original): The computer-readable medium of claim 21, wherein the instructions cause the processor to:

- instantiate a network driver to form a network-based connection with the remote storage device;
- direct the LVM to create a physical volume for the remote storage device as if the remote storage device were local to the LVM; and
- direct the LVM to add the physical volume to a volume group.

Claim 23 (Currently Amended): A system comprising:

- a logical volume manager (LVM) executing in an operating environment provided by a computer;
- a network attached storage (NAS) sensing module configured to ~~receive~~ intercept a multicast message from a remote storage device to a computer, and detect the attachment of the remote storage device to a network in response to ~~receiving~~ the intercepted multicast message;
- and

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a NAS management module configured to interact with the LVM and automatically incorporate storage capacity of the detected remote storage device into a logical storage volume.

Claim 24 (Original): The system of claim 23, wherein the NAS management module directs the LVM to incorporate the storage capacity into an existing logical volume.

Claim 25 (Original): The system of claim 23, wherein the NAS management module directs the LVM to incorporate the storage capacity into a new logical volume.

Claim 26 (Original): The system of claim 23, wherein the NAS management module automatically expands a size of a logical storage space provided by the operating environment to include the storage capacity of the remote storage device.

Claim 27 (Original): The system of claim 23, further comprising a policy manager to define one or more policies for incorporating the storage capacity of the remote storage device.

Claim 28 (Original): The system of claim 23, wherein the NAS management module directs the LVM manager to incorporate the storage capacity by forming a network-based connection with the remote storage device, creating a physical volume for the remote storage device and adding the physical volume to a volume group.

Claim 29 (Original): The system of claim 28, wherein the NAS management module selects the volume group from a number of volume groups based on the policies defined by a policy manager.

Claim 30 (Original): The system of claim 29, wherein the NAS sensing module intercepts a request from the remote storage device for an Internet Protocol (IP) address.

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Claim 31 (Original): The system of claim 23, wherein the computer is configured to maintain a pool of IP addresses and conform to the Dynamic Host Configuration Protocol (DHCP), and further wherein the NAS sensing module is configured to intercept a request from the remote storage device for an IP address.

Claim 32 (Cancelled).

Claim 33 (Original): The system of claim 23, wherein the NAS management module is configured to automatically instantiate a network driver to form a network-based connection with the remote storage device, direct the LVM to create a physical volume for the remote storage device as if the remote storage device were local to the LVM and directing the LVM to add the physical volume to a volume group.

Claim 34 (Currently Amended): A system comprising:

a network attached storage (NAS) device; and

a NAS master remotely coupled to the NAS device via a first network and configured to automatically incorporate storage capacity of the storage device into a logical storage volume upon detecting the attachment of the NAS storage device to the first network by intercepting a message from the device.

Claim 35 (Original): The system of claim 34 further comprising a client computer coupled to the NAS master via a second network and configured to access the logical storage volume.

Claim 36 (Original): The system of claim 34, wherein the NAS master is configured to automatically expand a size of a storage space mapped to the logical volume.

Claim 37 (Original): The system of claim 34, wherein the NAS master comprises a policy manager to define one or more policies for incorporating the storage capacity.

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Claim 38 (Original): The system of claim 34, wherein the NAS master is configured to maintain a pool of IP addresses and conform to the Dynamic Host Configuration Protocol (DHCP).

Claim 39 (Currently Amended): A method comprising:

detecting the attachment of a remote storage device to a network by intercepting a message from the device;

adding the remote storage device to the network in response to detecting the attachment of the remote storage device; and

incorporating the storage capacity of the remote storage device into the network without substantial human intervention.

Claim 40 (Cancelled).

Claim 41 (Original): The method of claim 39, wherein incorporating the storage capacity comprises incorporating the storage capacity into an existing logical volume.